April 2, 1940. K. F. NYSTROM 2,195,821

CAR UNDERFRAME

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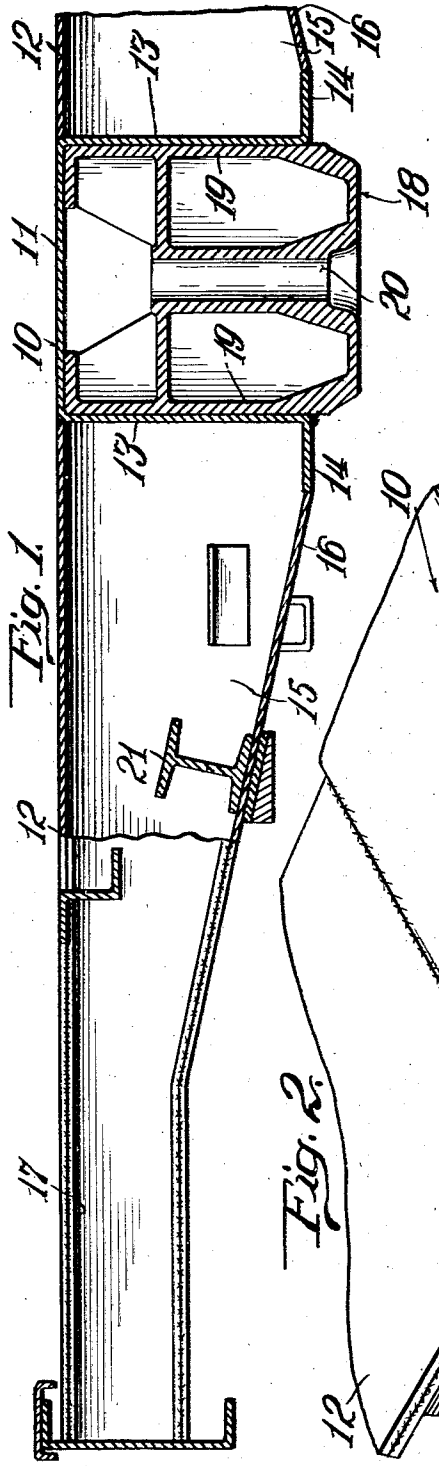


Fig. 1.

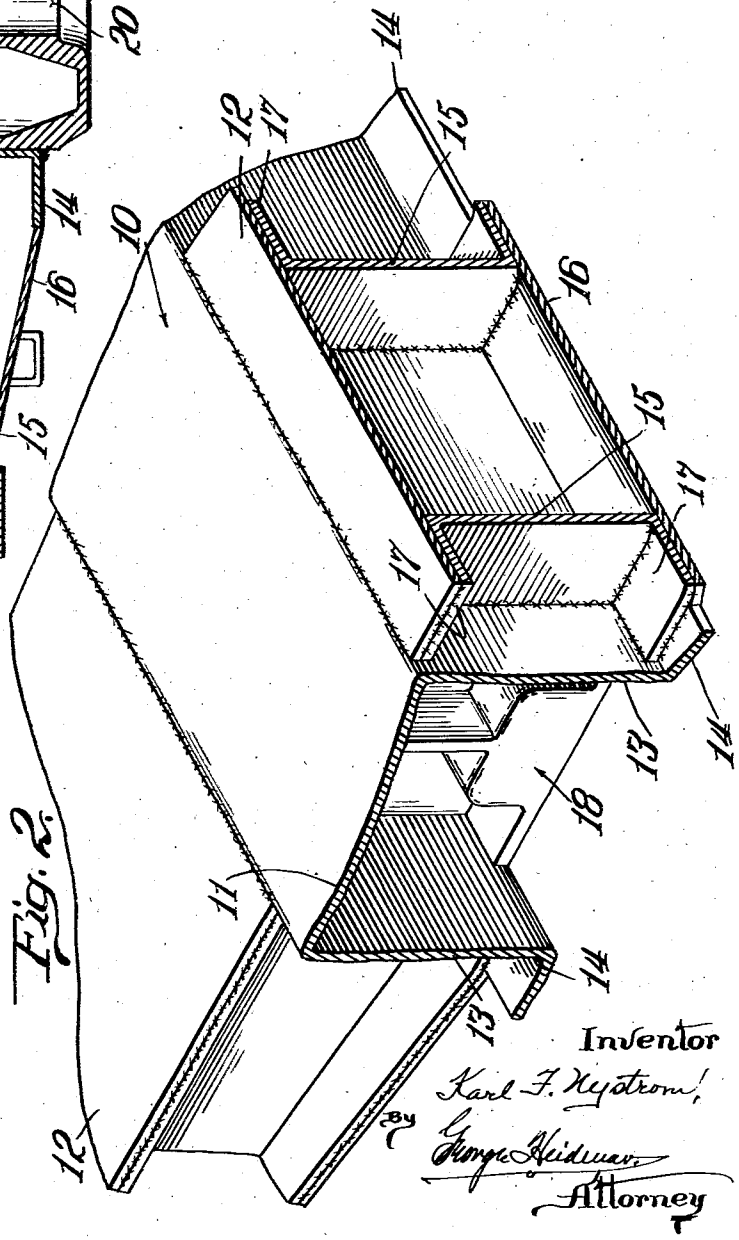


Fig. 2.

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CAR UNDERFRAME

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1 Claim. (Cl. 105—414)

My invention relates to the car underframe and more especially to the bolster center filler construction of a railroad freight car and particularly of what is known as an automobile car wherein the bottom cover plate at the intersection of the center sill and the bolster is eliminated and the bolster filler casting or element is combined with the center plate to provide an integral casting whereby a material saving in weight is effected and a greatly simplified construction provided.

The invention has for its object the provision of a construction wherein the bolster filler casting is united with the center plate so that the shocks will be transferred directly from the center sill construction to the truck, or vice versa, without the possibility of shearing rivets as, however, was possible and did occur in underframe constructions employing bottom cover plates with attached center plates as heretofore employed.

The purpose of my invention is to eliminate breakage and the attendant difficulties that have heretofore been encountered and to provide a stronger construction.

The objects and advantages of my invention will be readily comprehended from the detailed description of the accompanying drawing wherein:

Figure 1 is a partial side elevation and longitudinal sectional view of a part of a body bolster and center-filler; the right hand end of the bolster being broken away.

Figure 2 is a perspective view of the intermediate, center-filler receiving portion of the center sill and body bolster; the ends of the bolster and center sill being broken away.

In the particular exemplification, the center sill 10 is shown in the nature of an inverted channel member, with the bottom 11 of the inverted channel constituting the top of the center sill and preferably arranged in the same horizontal plane as the top of the bolster plates 12. The sides 13, 13 of the center sill channel terminate in outwardly disposed flanges 14, 14 which act as stiffeners.

The bolster is shown composed of the laterally spaced apart channels or flanged plates 15, 15, which constitute the sides of the bolster; and these side members 15, 15 are provided with the top plates 12 and the bottom plates 16; the top and bottom plates being integrally united with the side members or walls 15, 15 preferably by welding.

The flanges 17, 17, at the upper and lower longitudinal edges of the side plates 15, are preferably disposed outwardly and the top and bottom plates 12 and 16 are arranged to extend flush with the outer edges of the flanges 17, thus providing a compression member of substantial strength without undue weight.

It will be understood, of course, that a similar construction and arrangement of bolster forming members are employed on each side of the center sill 10 and the respective bolster-forming members are each integrally united—preferably by welding—with the sides of the center sill. That is to say, the bolster side members 15 abut against the sides 13 of the center sill 10 with the lower flange 17 arranged on the outwardly disposed flanges 14 of the center sill as shown in Figure 2; the abutting edges of the side members 15 being welded to the side walls of the center sill; the top plate 12 welded to the center sill sides flush with the top of the sill; while the bottom plate 16 of the bolster abuts against the outwardly disposed flanges 14 of the center sill and is welded thereto; thus providing an underframe construction wherein the body bolster is an integral part of the car center sill.

The center sill 10 coincident with the bolster is provided with a center filler 18 consisting of a webbed block or casting of width coextensive with the width of the center sill so that the sides 19, 19 of the casting will be flush with the side walls 13, 13 of the center sill, to which the center-filler is integrally united and a unitary structure provided.

The casting or center-filler 18 is of vertical dimensions greater than the depth of the center sill 10 and the top of the casting is in intimate relation with the top wall 11 of the center sill; while the lower end of the center-filler extends beneath the bottom plane of the center sill 10 and constitutes the center plate or male member of the center bearing. The lower extended end of the filler casting is shown slightly tapered and this portion is of circular formation in order to rotatably fit into the usual dished or correlated female member of the center bearing located on the truck bolster, not shown. The center filler 18 is shown provided with a pin receiving central bore 20.

With the combined center filler and center plate in intimate relation with the center sill at top as well as at the sides, the combined center filler and center plate will be rigidly held in place and the shocks encountered by the center sill will be transferred directly from the center sill through the combined center filler and center plate to the truck, or vice versa.

In structures as heretofore employed wherein a bolster bottom cover plate was employed to extend transversely beneath the center filler element, it has been difficult to obtain a perfect bearing or fit between the bolster bottom cover plate and the filler casting, with the result that the stresses encountered by the cover plate caused breakage due to the space between the filler and the cover plate.

In these structures as heretofore employed, the center plate was in turn secured to the bottom cover plate and by reason of conditions just recited the center plate was frequently broken and considerable difficulty was encountered. With my structure this weakness has been eliminated because no bottom cover plate is employed between filler and center bearing element; the elements just mentioned being displaced by the single unit constituting a combined center filler and center plate.

The combined center filler and center plate may comprise a suitable casting which, for the sake of lightness, has been illustrated as consisting of a webbed skeleton structure instead of a solid mass thus also enabling the unit to be more readily secured to the center sill.

In the particular exemplification, the bolster is shown provided with a reenforcing element 21 shown in the nature of an I-beam arranged transversely intermediate of the side walls 15, 15 of the bolster.

The specific exemplification disclosed in the drawing is believed to be the best adaptation of the invention, but certain alterations may be made without departing from the spirit of the invention.

What I claim is:

In a car underframe, a single piece metal center sill of inverted channel form with outwardly disposed flanges at the lower sides thereof; and a built-up body bolster consisting of two sections arranged on opposite sides of the center sill, each section being composed of a pair of spaced apart metal channel members arranged with their sides disposed horizontally outward, a top plate and a bottom plate extending across to the outer edges of the sides of both channel members and throughout the lengths thereof and welded thereto, the channel members of each bolster section resting on the bottom flanges of the center sill and each bolster section welded to the sides and to the flanges of the center sill with the top plates of the bolster sections arranged flush with the top of the center sill while the bottom plates of the bolster sections are arranged flush with the flanges of the center sill and the ends of said top and bottom plates welded to the center sill.

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